

## ABSTRACT

A hard biased spin-dependent tunneling sensor and manufacturing method therefor is provided having a substrate with a first lead formed thereon. A hard magnet is formed over the first lead and a free layer is formed over the hard magnet. A tunneling barrier layer with a 5 first pinned layer formed thereon is formed over the free layer. A nonmagnetic coupling layer with a second pinned layer formed thereon is formed over the first pinned layer. A pinning layer is formed over the second pinned layer and a second lead is formed over the pinning layer.

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